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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,621	03/29/2004	Chien-Hsueh Shih	67,200-1168	2719

7590 10/31/2007

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ART UNIT	**PAPER NUMBER**
1795	

MAIL DATE	DELIVERY MODE
10/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/811,621	SHIH ET AL.	
	Examiner	Art Unit	
	Edna Wong	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,9,12,13 and 17-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,9,12,13 and 17-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

This is in response to the Amendment After Final dated October 17, 2007. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

The finality of the rejection of the last Office action is withdrawn in view of the new grounds of rejection.

Response to Arguments

Claim Rejections - 35 USC § 103

I. Claims **1-2, 4-7 and 21-22** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** (US Patent No. 2003/0155247 A1) in combination with **Willis** (US Patent No. 4,347,108) and **Merriam-Webster's Collegiate Dictionary** (© 1997, pp. 1187-1188).

The rejection of claims 1-2, 4-7 and 21-22 under 35 U.S.C. 103(a) as being unpatentable over Miura et al. in combination with Willis and Merriam-Webster's Collegiate Dictionary has been withdrawn in view of Applicants' amendment.

II. Claims **9, 12-13 and 23-24** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** (US Patent No. 2003/0155247 A1) in combination with **Willis** (US Patent No. 4,347,108) and **Merriam-Webster's Collegiate Dictionary** (© 1997, pp. 1187-1188).

The rejection of claims 9, 12-13 and 23-24 under 35 U.S.C. 103(a) as being unpatentable over Miura et al. in combination with Willis and Merriam-Webster's Collegiate Dictionary has been withdrawn in view of Applicants' amendment.

III. Claims **17-20 and 25-26** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** (US Patent No. 2003/0155247 A1) in combination with **Willis** (US Patent No. 4,347,108) and **Merriam-Webster's Collegiate Dictionary** (© 1997, pp. 1187-1188).

The rejection of claims 17-20 and 25-26 under 35 U.S.C. 103(a) as being unpatentable over Miura et al. in combination with Willis and Merriam-Webster's Collegiate Dictionary has been withdrawn in view of Applicants' amendment.

Response to Amendment

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

I. Claims **1 and 2** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1).

Klaveness teaches an electrolyte bath, comprising:

(a) an electrolyte solution (= an aqueous solution of sodium dodecyl sulfate); and

(b) a composition comprising an organic acid and a non-ionic polymer mixed with said organic acid (= a stirred solution of acetic acid containing a surfactant), said non-ionic polymer selected from the group consisting of an alkoxylated alcohol, an alkoxylated amine, and an alkylphenol alkoxylate (= selected from PVP, pluronics and tetronics);

wherein said composition is disposed as a suspended layer within said electrolyte solution (= from the suspension in the mixture) [page 11, Example 6], said suspended layer of sufficient dimension (*inherent*) [MPEP § 2112.01 (II)].

The organic acid is selected from the group consisting of citric acid and acetic acid (= acetic acid) [page 11, Example 6].

The bath of Klaveness differs from the instant invention because Klaveness does

not disclose the following:

a. Wherein the bath is suitable for metal electroplating, as recited in claim 1.

b. Wherein the dimension is sufficient to form a wetting layer on a substrate as said substrate is passed through said suspended layer, as recited in claim 1.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because these claim limitations do not *compositionally distinguish* the bath from the prior art (MPEP § 2112(III)).

II. Claim **9** is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1).

Klaveness is as applied as discussed above and incorporated herein.

III. Claims **1-2 and 5-6** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Anderson** (US Patent No. 6,638,621 B2).

Anderson teaches an electrolyte bath, comprising:

(a) an electrolyte solution (= a lower solution) [col. 58, lines 29-39]; and

(b) a composition (= an upper solution) comprising an organic acid (= acetic acid) and a non-ionic polymer mixed with said organic acid, said non-ionic polymer selected from the group consisting of an alkoxylated alcohol, an alkoxylated amine, and an

alkylphenol alkoxylate (= Pluronic F-68) [col. 58, lines 39-45];

wherein said composition is disposed as a suspended layer within said electrolyte solution (= adding to the test tube as a layer of solution above the previous solution), said suspended layer of sufficient dimension (*inherent*) [MPEP § 2112.01 (II)].

The organic acid is selected from the group consisting of citric acid and acetic acid (= acetic acid) [col. 58, lines 42-43].

The non-ionic polymer has a molecular weight of less than 1,000 (col. 28, lines 29-32).

The bath of Anderson differs from the instant invention because Anderson does not disclose the following:

a. Wherein the bath is suitable for metal electroplating, as recited in claim 1.

b. Wherein the dimension is sufficient to form a wetting layer on a substrate as said substrate is passed through said suspended layer, as recited in claim 1.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because these claim limitations do not *compositionally distinguish* the bath from the prior art (MPEP § 2112(III)).

IV. Claim **9** is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Anderson** (US Patent No. 6,638,621 B2).

Anderson is as applied as discussed above and incorporated herein.

V. Claims **1-2 and 5-6** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** (US Patent No. 6,689,223 B1).

Meine teaches an electrolyte bath, comprising:

(a) an electrolyte solution (= a lower aqueous phase I) [col. 2, lines 16-20]; and

(b) a composition (= an upper aqueous phase II) [col. 2, lines 16-20] comprising an organic acid (= 8% by weight of citric acid) [col. 2, line 28] and a non-ionic polymer mixed with said organic acid (col. 2, lines 25-30), said non-ionic polymer selected from the group consisting of an alkoxylated alcohol, an alkoxylated amine, and an alkylphenol alkoxylate (= 2% by weight of C_{10-14} fatty alcohol + 1 PO/EO ether, 2% by weight of C_{12-14} fatty alcohol + 9 EO butyl ether) [col. 2, lines 25-27];

wherein said composition is disposed as a suspended layer within said electrolyte solution (= an upper aqueous phase II immiscible with the lower phase I) [col. 2, lines 16-20], said suspended layer of sufficient dimension (*inherent*) [MPEP § 2112.01 (II)].

The organic acid is selected from the group consisting of citric acid and acetic acid (= 8% by weight of citric acid) [col. 2, line 28].

The non-ionic polymer has a molecular weight of less than 1,000 (= 2% by weight of C_{10-14} fatty alcohol + 1 PO/EO ether, 2% by weight of C_{12-14} fatty alcohol + 9 EO butyl ether) [col. 2, lines 25-27].

The bath of Anderson differs from the instant invention because Anderson does not disclose the following:

a. Wherein the bath is suitable for metal electroplating, as recited in claim 1.

b. Wherein the dimension is sufficient to form a wetting layer on a substrate as said substrate is passed through said suspended layer, as recited in claim 1.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because these claim limitations do not *compositionally distinguish* the bath from the prior art (MPEP § 2112(III)).

VI. Claim **9** is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** (US Patent No. 6,689,223 B1).

Meine is as applied as discussed above and incorporated herein.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

I. Claims **4, 7 and 21-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Klaveness et al.** (US Patent Application Publication No.

2001/0022963 A1) as applied to claims 1 and 2 above.

Klaveness is as applied above and incorporated herein.

The bath of Klaveness differs from the instant invention because Klaveness does not disclose the following:

a. Wherein said composition is present in said electrolyte solution in a concentration of about 5% by weight, as recited in claim 4.

The composition disclosed by Klaveness inherently has a concentration in said electrolyte solution. Although not disclosed, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentration of the composition described by Klaveness with wherein said composition is present in said electrolyte solution in a concentration of about 5% by weight because where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05).

b. Wherein said organic acid is present in said composition in a wt.% of about 10, and wherein said non-ionic polymer is present in said composition in a wt.% of about 5, as recited in claim 7.

c. Wherein said non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt. %, as recited in claim 21.

d. Wherein said organic acid is present in said composition in a quantity of

from about 2 to about 20 wt. %, as recited in claim 22.

The organic acid and non-ionic polymer disclosed by Klaveness inherently have concentrations in said composition. Although not disclosed, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have

modified the concentrations of the organic acid and non-ionic polymer described by Klaveness with wherein said organic acid is present in said composition in a wt.% of about 10, and wherein said non-ionic polymer is present in said composition in a wt.% of about 5; wherein said non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt. %; and wherein said organic acid is present in said composition in a quantity of from about 2 to about 20 wt. % because where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05).

II. Claims **5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1) as applied to claims 1 and 2 above, and further in view of **BASF** ("Surfactants: Pluronic & Tetronic", pp. 1-40).

Klaveness is as applied above and incorporated herein.

The bath of Klaveness differs from the instant invention because Klaveness does not disclose wherein said non-ionic polymer has a molecular weight of less than 1,000, as recited in claim 5.

Klaveness teaches pluronics and tetronics (page 11, Example 6).

BASF teaches that pluronic surfactants allow incremental alteration of both hydrophobe and hydrophile. In addition heteric or alternating EO/PO structures can be introduced internally or at the end of the molecule and finally, total molecular weight of the copolymer can be varied (page 3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the non-ionic polymer described by Klaveness with wherein said non-ionic polymer has a molecular weight of less than 1,000 because the total molecular weight of the copolymer can be varied as taught by BASF (page 3). Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. *In re Boesch and Slaney* 205 USPQ 215 (CCPA 1980). Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable pluronic or tetronic surfactant.

III. Claims **12-13 and 23-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1) as applied to claim 9 above.

Klaveness is as applied above and incorporated herein.

IV. Claims **4, 7 and 21-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Anderson** (US Patent No. 6,638,621 B2) as applied to claims 1-2

and 5-6 above.

Anderson is as applied above and incorporated herein.

The bath of Anderson differs from the instant invention because Anderson does not disclose the following:

a. Wherein said composition is present in said electrolyte solution in a concentration of about 5% by weight, as recited in claim 4.

Anderson teaches 0.062 grams of Pluronic F-68 and 0.0132 grams of acetic acid (col. 58, lines 40-42).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentration of the composition described by Anderson with wherein said composition is present in said electrolyte solution in a concentration of about 5% by weight because where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05).

b. Wherein said organic acid is present in said composition in a wt.% of about 10, and wherein said non-ionic polymer is present in said composition in a wt.% of about 5, as recited in claim 7.

c. Wherein said non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt. %, as recited in claim 21.

d. Wherein said organic acid is present in said composition in a quantity of

from about 2 to about 20 wt. %, as recited in claim 22.

Anderson teaches 0.062 grams of Pluronic F-68 and 0.0132 grams of acetic acid (col. 58, lines 40-42).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentrations of the organic acid and non-ionic polymer described by Anderson with wherein said organic acid is present in said composition in a wt.% of about 10, and wherein said non-ionic polymer is present in said composition in a wt.% of about 5; wherein said non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt. %; and wherein said organic acid is present in said composition in a quantity of from about 2 to about 20 wt. % because where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05).

IV. Claims **12-13 and 23-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Anderson** (US Patent No. 6,638,621 B2) as applied to claim 9 above.

Anderson is as applied as discussed above and incorporated herein.

V. Claims **4, 7 and 21-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Meine et al.** (US Patent No. 6,689,223 B1) as applied to claims 1-2

and 5-6 above.

Meine is as applied above and incorporated herein.

The bath of Meine differs from the instant invention because Meine does not disclose the following:

a. Wherein said composition is present in said electrolyte solution in a concentration of about 5% by weight, as recited in claim 4.

Meine teaches 2% by weight of C_{10-14} fatty alcohol + 1 PO/EO ether, 2% by weight of C_{12-14} fatty alcohol + 9 EO butyl ether and 8% by weight of citric acid (col. 2, lines 25-28).

The composition disclosed by Meine inherently has a concentration in said electrolyte solution. Although not disclosed, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentration of the composition described by Meine with wherein said composition is present in said electrolyte solution in a concentration of about 5% by weight because where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05).

b. Wherein said organic acid is present in said composition in a wt.% of about 10, and wherein said non-ionic polymer is present in said composition in a wt.% of about 5, as recited in claim 7.

c. Wherein said non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt. %, as recited in claim 21.

d. Wherein said organic acid is present in said composition in a quantity of from about 2 to about 20 wt. %, as recited in claim 22.

Meine teaches 2% by weight of C_{10-14} fatty alcohol + 1 PO/EO ether, 2% by weight of C_{12-14} fatty alcohol + 9 EO butyl ether and 8% by weight of citric acid (col. 2, lines 25-28).

The organic acid and non-ionic polymer disclosed by Meine inherently have concentrations in said composition. Although not disclosed, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentration of the organic acid and non-ionic polymer described by Meine with wherein said organic acid is present in said composition in a wt.% of about 10, and wherein said non-ionic polymer is present in said composition in a wt.% of about 5; wherein said non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt. %; and wherein said organic acid is present in said composition in a quantity of from about 2 to about 20 wt. % because where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05).

VI. Claims **12-13 and 23-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Meine et al.** (US Patent No. 6,689,223 B1) as applied to claim 9

above.

Meine is as applied as discussed above and incorporated herein.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

Claims **17-20 and 25-26** define over the prior art of record because the prior art does not teach or suggest a method for electroplating a metal onto a surface in an electroplating electrolyte solution, comprising the steps of providing, forming, forming and electroplating as presently claimed, esp., the steps of forming a wetting layer on said surface by passing said surface through said suspended layer and into said electrolyte solution; and electroplating said metal onto said surface following forming said wetting layer.

The prior art does not contain any language that teaches or suggests the above. Therefore, a person skilled in the art would not have been motivated to adopt the above conditions, and a prima facie case of obviousness cannot be established.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Edna Wong
Primary Examiner
Art Unit 1795

EW
October 27, 2007